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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,665	03/30/2004	Peter W. Estelle	NOR-978B	3559
37172	7590	09/28/2004	EXAMINER	
WOOD, HERRON & EVANS, LLP (NORDSON)			KOCH, GEORGE R	
2700 CAREW TOWER			ART UNIT	
441 VINE STREET			PAPER NUMBER	
CINCINNATI, OH 45202			1734	

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/812,665	ESTELLE, PETER W.	
	<b>Examiner</b>	<b>Art Unit</b>	
	George R. Koch III	1734	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 4-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/30/2004</u> .   | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-3 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popp (US Patent 5,683,752) in view of Medler (US Patent 4,957,782) and Matt (US Patent 4,500,937).

Popp discloses a method of monitoring an operation of a dispensing gun (items 50) dispensing a pattern of fluid onto a substrate moving with respect to the dispensing gun, the dispensing gun turning ON and OFF in response to transition signals (the signals along the control pathway between item 140 and 50) and a sensor (item 152) providing feedback signals (to control 138) representing detected edges of fluid dispensed onto the substrate by an operation of the fluid dispensing gun. Popp also

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discloses that the system uses the detected edges of fluid to create a correction signal (see column 6, lines 55-60) which adjusts the delays in the transition of the gun.

Popp does not suggest measuring delays between occurrences of the transition signals, or even measuring the transition signals.

Medler discloses measuring the transition signals with a sensor (item 1), and using those signals to correct the operation of the transition signals, but is silent as to how the switching times are corrected. Matt discloses a method of monitoring an operation of a dispensing gun (item 210) dispensing a pattern of glue (length Z - see column 2, lines 54-55) onto a substrate moving (along conveyor 200) with respect to the dispensing gun, the dispensing gun turning ON and OFF in response to transition signals (the signals from the item labeled "DRIVER"), wherein the gun operation is monitored by measuring delays between the occurrences of the transition signals (Figure 5, line A) and compared with the signals representing the detection or actual presence of the edges of the fluid (see Figure 5, line C). One in the art would immediately appreciate that utilizing these two signals allows for proper calculation of the needed compensations, (as represented by lines D, E, and F of Figure 5). Furthermore, Matt discloses that proper operation of the compensation results in the dispenser depositing a bead of fluid commencing at a preselected position for a preselected duration (column 1, lines 6-10), i.e., results in accurate dispensing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the step of measuring the delays between the occurrences of the transition signals, by measuring the transitions as in Medler, and correlating that

data with the detecting of the corresponding edges of the fluid resulting from the transition signals, as in Matt, in order to achieve accurate dispensing.

As to claim 2, Medler as incorporated discloses detecting occurrences of transition signals commanding the gun to turn ON and OFF (via sensor 1, and see Figure 1). Popp, Medler, and Matt all disclose that the gun turns "ON" and "OFF" in response to their respective transition signals. Popp discloses detecting edges of the fluid dispensed onto the substrate (via item 152), and this dispensing was in response to the dispensing gun being turned ON and OFF.

As to claim 3, Matt as incorporated discloses a delay duration control element and a compensator control element (items 212 and 214). The output of the delay duration calculation step is the output related to the delays.

As to claim 13, Popp discloses a method of monitoring an operation of a dispensing gun dispensing an adhesive pattern onto a substrate moving with respect to the dispensing gun, the method comprising 1) providing gun ON and OFF signals (the signals along the pathway defined between elements 140 and 50, through items 142 and 58) representing times at which the dispensing gun should open and close, respectively, 2) opening and closing the dispensing gun in response to the gun ON and OFF signals (i.e., the operation of the gun), respectively, and 3) providing feedback signals (from camera 152) representing edges of the adhesive dispensed onto the substrate resulting from the opening and closing of the dispensing gun.

Popp does not disclose determining delays between occurrences of the gun ON and OFF signals and corresponding edges of the adhesive resulting from the gun ON and OFF signals.

Medler discloses measuring the transition signals with a sensor (item 1), and using those signals to correct the operation of the transition signals, but is silent as to how the switching times are corrected. Matt discloses a method of monitoring an operation of a dispensing gun (item 210) dispensing a pattern of glue (length Z - see column 2, lines 54-55) onto a substrate moving (along conveyor 200) with respect to the dispensing gun, the dispensing gun turning ON and OFF in response to transition signals (the signals from the item labeled "DRIVER"), wherein the gun operation is monitored by measuring delays between the occurrences of the transition signals which represent the gun ON and OFF signals (Figure 5, line A) and compared with the signals representing the detection or actual presence of the edges of the fluid (see Figure 5, line C). One in the art would immediately appreciate that utilizing these two signals allows for proper calculation of the needed compensations, (as represented by lines D, E, and F of Figure 5). Furthermore, Matt discloses that proper operation of the compensation results in the dispenser depositing a bead of fluid commencing at a preselected position for a preselected duration (column 1, lines 6-10), i.e., results in accurate dispensing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the step of measuring the delays between the occurrences of the transition signals, by measuring the transitions as in Medler, and correlating that data with the detecting of the corresponding edges of the

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fluid resulting from the transition signals, as in Matt, in order to achieve accurate dispensing.

As to claims 15, Medler as incorporated discloses using the signals from the gun activation element, i.e., the gun driver - defined by line FN in figure 1 and equivalent to the output of solenoid 58 in Popp, as the signal for which compensation is effected against.

As to claim 14, none of the references disclose using the signals from the pattern controller. Popp does disclose a pattern controller (limit switch 142, which creates the signals to the solenoids 58 which create the patterns of Figures 7-9, for example). One in the art would immediately recognize that the signals of the limit switch are identical to the signals of the solenoids, except for the delay from the solenoid activation, and one in the art can select either as a design choice. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such the signal from the pattern controller in replacement for the solenoid signal as both are equivalent signals in Popp.

#### ***Allowable Subject Matter***

4. Claims 4-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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5. The following is a statement of reasons for the indication of allowable subject matter: While the prior art of record (Popp and Matt) does disclose the limitations of claim 1, and also discloses providing a signal representing a presence of the substrate in proximity to the dispensing gun (See Matt, item 208), the prior art of record does not suggest in combination with the other limitations of claim 4 the steps of 1) sampling the transition signals and the feedback signals on a periodic basis, 2) storing sampled transition signals and sampled feedback signals, and 3) correlating the sampled feedback signals to the sampled transition signals to determine the delays.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III  
Patent Examiner  
Art Unit 1734

GRK  
9/18/2004